--14. A method of protecting skin and/or hair from the damaging effects of light, said method comprising topically applying to skin and/or hair a light protective effective amount of a cosmetic or dermatological composition according to any one of claims 7-11. --

--15. A method of protecting skin and/or hair from the damaging effects of light, said method comprising topically applying to skin and/or hair a light protective effective amount of a cosmetic or dermatological composition according to claim 12. --

REMARKS

This is in response to the official action dated November 15, 2001. Reconsideration in view of the following is respectfully requested.

The limitation of claim 13 has been brought into the main independent claim 7.

Claims 7-16 stand rejected based on a double patenting rejection in view of 09/700,102 in combination with Defossez. This rejection is overcome by the following terminal disclaimer.

Beiersdorf AG represents that it is the assignee of the above-identified application by virtue of an assignment which was recorded in the U.S. Patent Office on November 9, 2000, at Reel 011341 , Frame 0769 . Assignee hereby disclaims the terminal portion of any patent granted on the above-identified application which would extend beyond the expiration date of any patent resulting from co-pending U.S. serial number 09/700,102, filed November 9, 2000,

and hereby agrees that any patent so granted on the present application shall be enforceable only for and during such period that the legal title to said patent shall be the same as the legal title to any patent granted from U.S. ser. No. 09/700,102, this agreement to run with any patent granted on the present application and to be binding upon the grantee, its successors or assigns.

Assignee does not disclaim any terminal part of any patent granted on the present application prior to the expiration date of the full statutory term as presently shortened by any Terminal Disclaimer of any patent granted from U.S. ser. No. 09/700,102, in the event that it later: (1) expires for failure to pay a maintenance fee, (2) is held unenforceable, (3) is found invalid, (4) is statutorily disclaimed in whole, (5) is terminally disclaimed under 37 C.F.R. 1.321(a), (6) has all claims canceled by a reexamination certificate, or (7) is otherwise terminated prior to the expiration of its statutory term as presently shortened by any Terminal Disclaimer, except for the separation of legal title stated above.

The undersigned is an attorney of record and authorized to sign and submit this terminal disclaimer. The terminal disclaimer fee of $110 should be charged to Deposit Account no. 14-1263.

Accordingly, the double patenting rejection should be withdrawn.

Applicant submits herewith a certified translation of the priority document. Therefore,

applicant may claim reliance on the filing date of the priority application as its effective filing date, namely May 9, 1998. Accordingly, Nguyen having a Section 102(e) date of May 29, 1998, and Lüder, having a publication date of November 26, 1998, are not properly considered prior art, and can not form the basis of a rejection.

Claims 7-10 and 14 stand rejected under 35 USC 102 in view of Stäb; and claims 7-11 and 14 stand rejected under 35 USC 102 in view of Lüder. Claim 13 has now been brought into claim 7. Accordingly, these claims, all depending from claim 7, are not anticipated, as neither reference teaches hexyldecyl laurate. Furthermore, Lüder is not a proper reference, as its effective date is after applicants' priority date, as shown above.

Claims 11, 12 and 15 stand rejected over Stäb under Section 103. As the limitations of claim 13 have now been brought into main claim 7, these claims which are dependent on claim 7 are not obvious.

Claims 12 and 15 stand rejected under Section 103 over a combination of Stäb and Lüder. As set forth above, Lüder is not a proper reference. Therefore, the rejection must fail.

Claims 13 and 16 stand rejected as being obvious under Section 103, in view of Lüder or Stäb, in combination with Nguyen or Defossez. For reasons set forth above, only the rejection based on Stäb in view of Defossez is relevant. Stäb teaches in Example 19 (column 12) a sun gel composition comprising (a) triazine and (b) isopropyl myristate as ester.

As amended, claim 7 incorporates the limitations of claim 13. The examiner concedes that Stäb does not specifically teach hexyldecly laurate as the ester, but cites the Defossez reference (col. 5, lines 10-15). This patent teaches isopropyl myristate and hexyldecyl laurate as being interchangeable as *binding agents* in a cosmetic formulation. The examiner thus concludes that hexyldecly laurate may be substituted for the isopropyl myristate in the Stäb compound, in order to achieve the intended effect.

However, there is no suggestion by either Stäb or Defossez that hexyldecyl laurate will have the surprising effect of *avoiding crystallization* when used in combination with the triazine compound. Therefore, claim 7 and claims dependent thereon are not obvious.

Wherefore, allowance of all pending claims is earnestly solicited.

Respectfully submitted,

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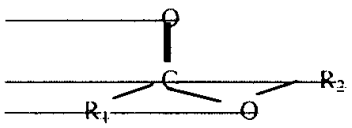
MARKED-UP CLAIMS

7 (amended). A cosmetic of dermatological composition suitable for protecting skin and/or hair from the damaging effects of light, said cosmetic or dermatological composition comprising a light protective effective amount of a combination of:

a) tris(2-ethylhexyl) 4,4',4"-(1,3,5-triazine-2,4,6 triyltriimino)trisbenzoate; and

b) hexyldecyl laurate ~~one or more esters of unbranched-chain carboxylic acids and branched-chain alcohols of the formula:~~



~~wherein R1 represents an unbranched-chain alkyl radical having 3 to 30 carbon atoms and R2 represents a monobranched or polybranched alkyl radical having 3 to 30 carbon atoms.~~ -

--8. The cosmetic or dermatological composition according to claim 7, which comprises 0.1 to 10.0% by weight of tris(2-ethylhexyl) 4,4',4"-(1,3,5-triazine-2,4,6triyltriimino)trisbenzoate based on the total weight of the composition. -

- -9. The cosmetic or dermatological composition according to claim 8, which comprises 0.5 to 6.0% by weight of tris(2-ethylhexyl) 4,4',4"-(1,3,5-triazine-2,4,6 triyltriimino)trisbenzoate based on the total weight of the composition. - -

--10. (amended) The cosmetic or dermatological composition according to claim 7, which comprises a total of 0.1 to 25.0% by weight of hexyldecyl laurate ~~said one or more esters of unbranched chain carboxylic acids and branched chain alcohols of said formula~~ based on the total weight of the composition. --

--11. (amended) The cosmetic or dermatological composition according to claim 10, which comprises a total of 0.5 to 15.0% by weight of hexyldecyl laurate ~~said one or more esters of unbranched chain carboxylic acids and branched chain alcohols of said formula~~ based on the total weight of the composition. --

- -12. (amended) The cosmetic or dermatologicl composition according to any one of claims 7-11, wherein the hexyldecyl laurate is~~one or more esters of unbranched chain carboxylic acids and branched chain alcohols are~~ present in the composition in admixture with one or more of its parent alcohols~~having the formula R2 OH~~. - -

~~--13. The cosmetic or dermatological composition according to any one of claims 7-11, wherein the ester of unbranched chain carboxylic acids and branched chain alcohols is hexyldecyl laurate. --~~

--14. A method of protecting skin and/or hair from the damaging effects of light, said method comprising topically applying to skin and/or hair a light protective effective amount of a cosmetic or dermatological composition according to any one of claims 7-11. --

--15. A method of protecting skin and/or hair from the damaging effects of light, said method comprising topically applying to skin and/or hair a light protective effective amount of a cosmetic or dermatological composition according to claim 12. --

~~--16. A method of protecting skin and/or hair from the damaging effects of light, said method comprising topically applying to skin and/or hair a light protective effective amount of a cosmetic or dermatological composition according to claim 13.--~~

UNITED STATES PATENT AND TRADEMARK OFFICE

I, Susan POTTS BA ACIS,

Director of RWS Group plc, of Europa House, Marsham Way, Gerrards Cross, Buckinghamshire, England declare;

1. That I am a citizen of the United Kingdom of Great Britain and Northern Ireland.

2. That the translator responsible for the attached translation is well acquainted with the German and English languages.

3. That the attached is, to the best of RWS Group plc knowledge and belief, a true translation into the English language of the accompanying copy of the specification filed with the application for a patent in Germany on 9 May 1998 under the number 198 20 825.1 and the official certificate attached hereto.

4. That I believe that all statements made herein of my own knowledge are true and that all statements made on information and belief are true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the patent application in the United States of America or any patent issuing thereon.

For and on behalf of RWS Group plc

The 9th day of May 2002

FEDERAL REPUBLIC OF GERMANY

Certificate

Beiersdorf Aktiengesellschaft

of

Hamburg/Germany

have filed a Patent Application under the title:

"Cosmetic and dermatological light protection formulations containing triazine derivatives and one or more esters of unbranched-chain carboxylic acids and branched-chain alcohols"

on 9 May 1998 at the German Patent and Trademark Office.

The attached document is a correct and accurate reproduction of the original submission for this Patent Application.

The German Patent and Trademark Office has for the time being given the Application the symbol A 61 K 7/42 of the International Patent Classification.

Munich, 15 April 1999

German Patent and Trademark Office

The President

pp

Dzierzon

File No: 198 20 825.1

Beiersdorf Aktieng s llschaft
Hamburg

Description

Cosmetic and dermatological light protection formulations containing triazine derivatives and one or more esters of unbranched-chain carboxylic acids and branched-chain alcohols

The present invention relates to cosmetic and dermatological light protection formulations, in particular skincare cosmetic and dermatological light protection preparations.

The harmful effect of the ultraviolet part of solar radiation on the skin is generally known. While rays with a wavelength of less than 290 nm (the so-called UVC region) are absorbed by the ozone layer in the earth's atmosphere, rays in the range between 290 nm and 320 nm, the so-called UVB range, cause erythema, simple sunburn or even burns of varying severity.

The maximum given for the erythema activity of sunlight is the narrower range around 308 nm.

Numerous compounds are known for protecting against UVB radiation; these are usually derivatives of 3-benzylidenecamphor, of 4-aminobenzoic acid, of cinnamic acid, of salicylic acid, of benzophenone and also of 2-phenylbenzimidazole.

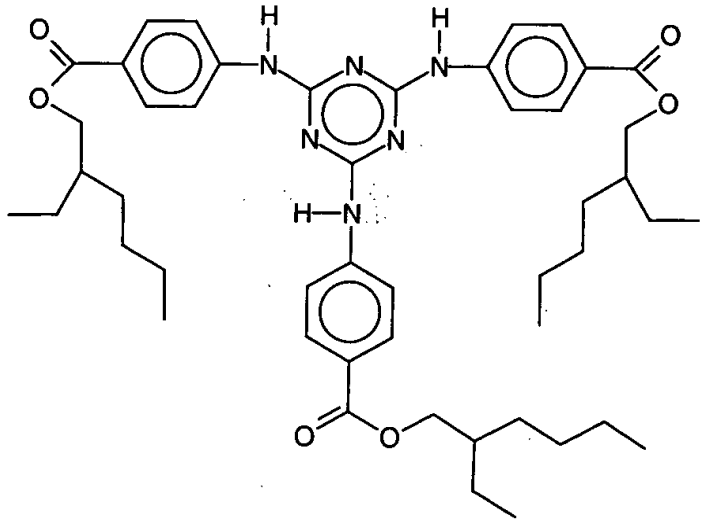
It is also important to have available filters for the range between about 320 nm and about 400 nm, the so-called UVA region, since its rays can likewise cause damage. Thus, it has been found that UVA radiation leads to damage of the elastic and collagenous fibers of connective tissue, causing premature aging of the skin, and that it is to be regarded as a cause of numerous phototoxic and photoallergic reactions. The harmful effect of UVB radiation can be intensified by UVA radiation.

However, UV radiation can also lead to photochemical reactions, in which case th photochemical reaction products intervene in the skin's metabolism.

Such photochemical reaction products are predominantly free-radical compounds, e.g. hydroxyl radicals. Undefined free-radical photoproducts which form in the skin itself can also display uncontrolled secondary reactions because of their high reactivity. However, singlet oxygen, a non-radical excited state of the oxygen molecule, can also arise during UV radiation, as can short-lived epoxides and many other species. Singlet oxygen, for example, differs from the normal triplet oxygen (free-radical ground state) by virtue of its increased reactivity. However, excited reactive (free-radical) triplet states of the oxygen molecule also exist.

Furthermore, UV radiation is a type of ionizing radiation. There is therefore the risk that UV exposure may also produce ionic species which then, for their part, are capable of oxidative intervention in the biochemical processes.

An advantageous UVB filter is tris(2-ethylhexyl) 4,4',4"-(1,3,5-triazine-2,4,6-triyltriimino)trisbenzoate, also known as 2,4,6-tris-[anilino(p-carbo-2'-ethyl-1'-hexyloxy)]-1,3,5-triazine.

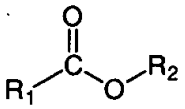


This UVB filter is sold by BASF Aktiengesellschaft under the trade name UVINUL7 T 150 and is notable for its good UV absorption properties.

The main disadvantage of this UVB filter is its poor solubility in lipids. Known solvents for this UVB filter can dissolve a maximum of about 15% by weight of this filter, corresponding to about 1-1.5% by weight of dissolved, and therefore active, UV filter substance.

It was nevertheless surprising, and could not have been foreseen by the person skill d in the art, that active ingredient combinations comprising tris(2-ethylhexyl) 4,4',4"-(1,3,5-triazine-2,4,6-triyltriimino)trisbenzoate and one or more esters of unbranched-chain carboxylic acids and branched-chain alcohols, or the use of one or more esters of unbranched-chain carboxylic acids and branched-chain alcohols as solvent, solubility promoter or solubilizer for tris(2-ethylhexyl) 4,4',4"-(1,3,5-triazine-2,4,6-triyltriimino)trisbenzoate, in particular for the use in light protection compositions, would overcome the disadvantages of the prior art.

The esters of unbranched-chain carboxylic acids and branched-chain alcohols according to the invention can advantageously be chosen from the group of substances of the general formula



in which R_1 is an unbranched-chain alkyl radical having 3 to 30 carbon atoms, and R_2 represents mono- or polybranched alkyl radicals having 3 to 30 carbon atoms.

R_1 is advantageously an unbranched-chain alkyl radical having up to 20 carbon atoms.

In addition, R_2 is advantageously a mono- or polybranched alkyl radical having up to 25 carbon atoms.
For the purposes of the present invention, the carboxylic ester(s) is/are very particularly advantageously present in a mixture with the parent alcohols R_2-OH.
It is particularly advantageous to use hexyldecyl laurate, for example in a mixture with hexyldecyl alcohol as the carboxylic ester used according to the invention. Such a mixture is entered in the Chemical Abstracts under the registry numbers 70693-04-8 and 34362-27-1 and is sold, for example, by Henkel KGaA under the name Cetiol®PGL. As is known, it can be used in cosmetic and dermatological preparations as an oil component.

It was nevertheless surprising that the addition of one or more esters of unbranched-chain carboxylic acids and branched-chain alcohols effects stabilization of solutions of tris(2-ethylhexyl) 4,4',4"-(1,3,5-triazine-2,4,6-triyltriimino)trisbenzoate, since the latter substance not only has poor solubility, but also readily crystallizes out again from its solution. The invention therefore also provides a method of stabilizing

solutions of tris(2-ethylhexyl) 4,4',4"-(1,3,5-triazine-2,4,6-triyltriimino)trisbenzoate, which comprises adding an effective cont nt of one or more esters of unbranched-chain carboxylic acids and branched-chain alcohols to such solutions.

The total amount of tris(2-ethylhexyl) 4,4',4"-(1,3,5-triazine-2,4,6-triyltriimino)trisbenzoate in the finished cosmetic or dermatological preparations is advantageously chosen from the range 0.1-10.0% by weight, preferably 0.5-6.0% by weight, based on the total weight of the preparations.

The total amount of one or more esters of unbranched-chain carboxylic acids and branched-chain alcohols in the finished cosmetic or dermatological preparations is advantageously chosen from the range 0.1-25.0% by weight, preferably 0.5-15.0% by weight, based on the total weight of the preparations.

It is advantageous to choose weight ratios of tris(2-ethylhexyl) 4,4',4"-(1,3,5-triazine-2,4,6-triyltriimino)trisbenzoate and one or more esters of unbranched-chain carboxylic acids and branched-chain alcohols from the range 1 : 10 to 10 : 1, preferably 1 : 4 to 4 : 1.

Cosmetic and dermatological preparations according to the invention also advantageously comprise inorganic pigments based on metal oxides and/or other metal compounds which are sparingly soluble or insoluble in water, in particular the oxides of titanium (TiO_2), zinc (ZnO), iron (e.g. Fe_2O_3), zirconium (ZrO_2), silicon (SiO_2), manganese (e.g. MnO), aluminum (Al_2O_3), cerium (e.g. Ce_2O_3), mixed oxides of the corresponding metals and mixtures of such oxides. Pigments based on TiO_2 are particularly preferred.

For the purposes of the present invention, it is particularly advantageous, although not imperative, if the inorganic pigments are present in hydrophobic form, i.e. they have been surface-treated to repel water. This surface treatment can consist in providing the pigments with a thin hydrophobic layer by processes known per se.

One such process consists, for example, in producing the hydrophobic surface layer by the reaction according to :

n TiO_2 + m $(RO)_3$ Si-R'6n TiO_2 (surf.)

where n and m are arbitrary stoichiometric parameters and R and R' are the desired organic radicals. Hydrophobicized pigments prepared analogously to DE-A 33 14 742, for example, are advantageous.

Advantageous TiO_2 pigments are available, for example, under the trad nam s MT 100 T from TAYCA, also M 160 from Kemira and T 805 from Degussa.

The cosmetic and/or dermatological light protection formulations according to the invention can have the conventional compositions and can be used for cosmetic and/or dermatological light protection, and also for the treatment, care and cleansing of the skin and/or hair and as make-up products in decorative cosmetics.

For use, the cosmetic and dermatological preparations according to the invention are applied to the skin and/or hair in sufficient amount and in the manner conventional for cosmetics.

Particularly preferred cosmetic and dermatological preparations are those which are in the form of a sunscreen. Advantageously, these can additionally comprise at least one further UVA filter and/or at least one further UVB filter and/or at least one inorganic pigment, preferably an inorganic micropigment.

The cosmetic and dermatological preparations according to the invention can comprise cosmetic auxiliaries such as those customarily used in such preparations, e.g. preservatives, bactericides, perfumes, antifoams, dyes, pigments which have a coloring effect, thickeners, moisturizers and/or humectants, fats, oils, waxes, or other customary constituents of a cosmetic or dermatological formulation, such as alcohols, polyols, polymers, foam stabilizers, electrolytes, organic solvents or silicone derivatives.

An additional content of antioxidants is generally preferred. According to the invention, favorable antioxidants which can be used are all antioxidants suitable or customary for cosmetic and/or dermatological applications.

The antioxidants are advantageously chosen from the group consisting of amino acids (e.g. glycine, histidine, tyrosine, tryptophan) and derivatives thereof, imidazoles, (e.g. urocanic acid) and derivatives thereof, peptides, such as D,L-carnosine, D-carnosine, L-carnosine and derivatives thereof (e.g. anserine), carotenoids, carotenes (e.g. α-carotene, β-carotene, lycopene) and derivatives thereof, chlorogenic acid and derivatives thereof, lipoic acid and derivatives thereof (e.g. dihydrolipoic acid), aurothioglucose, propylthiouracil and other thiols (e.g. thioredoxin, glutathione, cysteine, cystine, cystamine and glycosyl, N-acetyl, methyl, ethyl, propyl, amyl, butyl and lauryl, palmitoyl, oleyl, γ-linoleyl, cholesteryl and glyceryl esters thereof) and salts

thereof, dilauryl thiodipropionate, distearyl thiodipropionate, thiodipropionic acid and derivatives ther of (esters, ethers, peptides, lipids, nucleotides, nucleosides and salts) and sulfoximine compounds (e.g. buthionine-sulfoximines, homocysteine-sulfoximine, buthionine-sulfones, penta-, hexa-, heptathionine-sulfoximines) in very low tolerated doses (e.g. pmol to µmol/kg), and also (metal) chelating agents (e.g. α-hydroxyfatty acids, palmitic acid, phytic acid, lactoferrin), α-hydroxy acids (e.g. citric acid, lactic acid, malic acid), humic acid, bile acid, bile extracts, bilirubin, biliverdin, EDTA, EGTA and derivatives thereof, unsaturated fatty acids and derivatives thereof (e.g. γ-linolenic acid, linoleic acid, oleic acid), folic acid and derivatives thereof, furfurylidenesorbitol and derivatives thereof, ubiquinone and ubiquinol and derivatives thereof, vitamin C and derivatives (e.g. ascorbyl palmitate, Mg ascorbyl phosphate, ascorbyl acetate), tocopherols and derivatives (e.g. vitamin E acetate), vitamin A and derivatives (vitamin A palmitate) and coniferyl benzoate of benzoin resin, rutinic acid and derivatives thereof, α-glycosylrutin, ferulic acid, furfurylideneglucitol, carnosine, butylhydroxytoluene, butylhydroxyanisole, nordihydroguaiacic acid, nordihydroguaiaretic acid, trihydroxybutyrophenone, uric acid and derivatives thereof, mannose and derivatives thereof, zinc and derivatives thereof (e.g. ZnO, $ZnSO_4$), selenium and derivatives thereof (e.g. selenomethionine), stilbenes and derivatives thereof (e.g. stilbene oxide, trans-stilbene oxide), and the derivatives (salts, esters, ethers, sugars, nucleotides, nucleosides, peptides and lipids) of said active ingredients which are suitable according to the invention.

The amount of the abovementioned antioxidants (one or more compounds) in the preparations is preferably from 0.001 to 30% by weight, particularly preferably from 0.05 to 20% by weight, in particular from 1 to 10% by weight, based on the total weight of the preparation.

If vitamin E and/or derivatives thereof are used as the antioxidant or antioxidants, their respective concentrations are advantageously chosen from the range 0.001 - 10% by weight, based on the total weight of the formulation.

If vitamin A or vitamin A derivatives or carotenes or derivatives thereof are used as the antioxidant or antioxidants, their respective concentrations are advantageously chosen from the range 0.001 - 10% by weight, based on the total weight of the formulation.

The lipid phase can advantageously be chosen from the following group of substances:

- mineral oils, mineral waxes

- oils, such as triglycerides of capric or of caprylic acid, but preferably castor oil;
- fats, waxes and other natural and synthetic fatty substances, preferably esters of fatty acids with alcohols of low carbon number, e.g. with isopropanol, propylene glycol or glycerol, or esters of fatty alcohols with alkanoic acids of low carbon number or with fatty acids;
- alkyl benzoates;
- silicone oils such as dimethylpolysiloxanes, diethylpolysiloxanes, diphenylpolysiloxanes and mixtures thereof.

For the purposes of the present invention, the oil phase of the emulsions, oleogels and hydrodispersions or lipodispersions is advantageously chosen from the group of esters of saturated and/or unsaturated, branched and/or unbranched alkanecarboxylic acids having a chain length of from 3 to 30 carbon atoms and saturated and/or unsaturated, branched and/or unbranched alcohols having a chain length of from 3 to 30 carbon atoms, from the group of esters of aromatic carboxylic acids and saturated and/or unsaturated, branched and/or unbranched alcohols having a chain length of from 3 to 30 carbon atoms. Such ester oils can advantageously be chosen from the group consisting of isopropyl myristate, isopropyl palmitate, isopropyl stearate, isopropyl oleate, n-butyl stearate, n-hexyl laurate, n-decyl oleate, isooctyl stearate, isononyl stearate, isononyl isononanoate, 2-ethylhexyl palmitate, 2-ethylhexyl laurate, 2-hexyldecyl stearate, 2-octyldodecyl palmitate, oleyl oleate, oleyl erucate, erucyl oleate, erucyl erucate and synthetic, semi-synthetic and natural mixtures of such esters, e.g. jojoba oil.

The oil phase can also advantageously be chosen from the group of branched and unbranched hydrocarbons and hydrocarbon waxes, of silicone oils, of dialkyl ethers, from the group of saturated or unsaturated, branched or unbranched alcohols, and also fatty acid triglycerides, namely the triglycerol esters of saturated and/or unsaturated, branched and/or unbranched alkanecarboxylic acids having a chain length of from 8 to 24, in particular 12 - 18, carbon atoms. The fatty acid triglycerides can advantageously be chosen, for example, from the group of synthetic, semi-synthetic and natural oils, e.g. olive oil, sunflower oil, soybean oil, groundnut oil, rapeseed oil, almond oil, palm oil, coconut oil, palm kernel oil and the like.

For the purposes of the present invention, any mixtures of such oil and wax components can also advantageously be used. When required, it can also be advantageous to use waxes, for example cetyl palmitate, as the sol lipid component of the oil phase.

The oil phase is advantageously chosen from th group consisting of 2- thylhexyl isostearate, octyldodecanol, isotridecyl isononanoate, isoeicosan , 2-ethylhexyl cocoate, C_{12}-C_{15}-alkyl benzoate, caprylic/capric triglyceride and dicaprylyl ether.

Mixtures of C_{12}-C_{15}-alky [sic] benzoate and 2-ethylhexyl isostearate, mixtures of C_{12}-C_{15}-alky [sic] benzoate and isotridecyl isononanoate and mixtures of C_{12}-C_{15}-alky [sic] benzoate, 2-ethylhexyl isostearate and isotridecyl isononanoate are particularly advantageous.

For the purposes of the present invention, of the hydrocarbons, paraffin oil, squalane and squalene can advantageously be used.

The oil phase can advantageously also contain cyclic or linear silicone oils or can consist entirely of such oils, although it is preferable to use an additional content of other oil phase components in addition to the silicone oil or silicone oils.

Cyclomethicone (octamethylcyclotetrasiloxane) is advantageously used as silicone oil to be used according to the invention. However, other silicone oils can also be used advantageously for the purposes of the present invention, for example hexamethylcyclotrisiloxane, polydimethylsiloxane, poly(methylphenylsiloxane).

Mixtures of cyclomethicone and isotridecyl isononanoate and mixtures of cyclomethicone and 2-ethylhexyl isostearate are particularly advantageous.

The aqueous phase of the preparations according to the invention may advantageously comprise

- alcohols, diols or polyols of low carbon number, and also ethers thereof, preferably ethanol, isopropanol, propylene glycol, glycerol, ethylene glycol, ethylene glycol monoethyl or monobutyl ether, propylene glycol monomethyl, monoethyl or monobutyl ether, diethylene glycol monomethyl or monoethyl ether and analogous products, and also alcohols of low carbon number, e.g. ethanol, isopropanol, 1,2-propanediol, glycerol, and in particular one or more thickeners which can advantageously be chosen from the group consisting of silicon dioxide, aluminum silicates, polysaccharides and derivatives thereof, e.g. hyaluronic acid, xanthan gum, hydroxypropylmethylcellulose, and particularly advantageously from the group of polyacrylates, preferably a polyacrylate from the group of the so-called Carbopols, for example Carbopol grades 980, 981, 1382, 2984, 5984, in each case individually or in combination.

The cosmetic or dermatological light protection preparations advantageously comprise inorganic pigments, in particular micropigments, e.g. in amounts of from 0.1% by weight to 30% by weight, preferably in amounts of from 0.5% by weight to 10% by weight, but in particular from 1% by weight to 6% by weight, based on the total weight of the preparations.

It is advantageous according to the invention to use, apart from the combinations according to the invention, oil-soluble UVA filters and/or UVB filters in the lipid phase and/or water-soluble UVA filters and/or UVB filters in the aqueous phase.

The light protection formulations according to the invention can advantageously comprise further substances which absorb UV radiation in the UVB region, the total amount of filter substances being e.g. from 0.1% by weight to 30% by weight, preferably from 0.5 to 10% by weight, in particular from 1 to 6% by weight, based on the total weight of the preparations, in order to provide cosmetic preparations which protect the skin from the entire range of ultraviolet radiation. They can also be used as sunscreens.

The further UVB filters can be oil-soluble or water-soluble. Examples of advantageous oil-soluble UVB filter substances are:

- 3-benzylidenecamphor derivatives, preferably 3-(4-methylbenzylidene)camphor, 3-benzylidenecamphor;
- 4-aminobenzoic acid derivatives, preferably 2-ethylhexyl 4-(dimethylamino)benzoate, amyl 4-(dimethylamino)benzoate;
- esters of cinnamic acid, preferably 2-ethylhexyl 4-methoxycinnamate, isopentyl 4-methoxycinnamate;
- derivatives of benzophenone, preferably 2-hydroxy-4-methoxybenzophenone, 2-hydroxy-4-methoxy-4'-methylbenzophenone, 2,2'-dihydroxy-4-methoxybenzophenone;
- esters of benzalmalonic acid, preferably di(2-ethylhexyl) 4-methoxybenzalmalonate.

Examples of advantageous water-soluble UVB filter substances are:

- salts of 2-phenylbenzimidazole-5-sulfonic acid, such as its sodium, potassium or its triethanolammonium salt, and also the sulfonic acid itself;
- sulfonic acid derivatives of benzophenones, preferably 2-hydroxy-4-methoxybenzophenone-5-sulfonic acid and salts thereof;

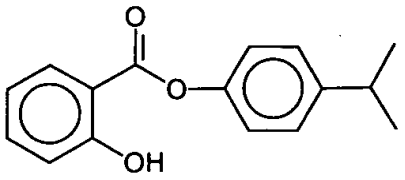
- sulfonic acid derivatives of 3-benzylidenecamphor, such as e.g. 4-(2-oxo-3-bornylidenemethyl)benzenesulfonic acid, 2-methyl-5-(2-oxo-3-bornylidene-methyl)sulfonic acid and salts thereof.

The list of said further UVB filters which can be used in combination with the active ingredient combinations according to the invention is of course not intended to be limiting.

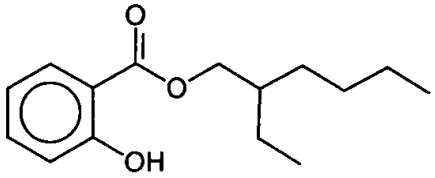
It can also be advantageous to combine the combinations according to the invention with further UVA filters which have hitherto been customarily present in cosmetic preparations. These substances are preferably derivatives of dibenzoylmethane, in particular 1-(4'-tert-butylphenyl)-3-(4'-methoxyphenyl)propane-1,3-dione and 1-phenyl-3-(4'-isopropylphenyl)propane-1,3-dione. These combinations and preparations which contain these combinations are also provided by the invention. The amounts which may be used are as for the UVB combination.

It is further advantageous to combine the active ingredient combinations according to the invention with further UVA and/or UVB filters.

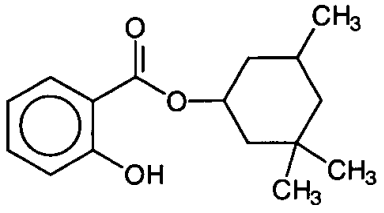
It is also particularly advantageous to combine the active ingredient combinations according to the invention with salicylic acid derivatives, some of which, as is known, can also absorb UV radiation. Customary UV filters include



(4-isopropylbenzyl salicylate),



(2-ethylhexyl salicylate, octyl salicylate),



(homomenthyl salicylate).

The invention further provides a process for the preparation of the cosmetic and/or dermatological light protection preparations according to the invention, which comprises suspending and, if desired, homogenizing tris(2-ethylhexyl) 4,4',4"-(1,3,5-triazine-2,4,6-triyltriimino)trisbenzoate in one or more esters of unbranched-chain carboxylic acids and branched-chain alcohols or an oil phase containing one or more esters of unbranched-chain carboxylic acids and branched-chain alcohols with uniform stirring and if necessary with warming, where appropriate combining the mixture with further lipid components and optionally with one or more emulsifiers, then mixing the oil phase with the aqueous phase into which a thickener has optionally been incorporated and which is preferably at the same temperature as the oil phase, if desired homogenizing the mixture, and allowing it to cool to room temperature. After the mixture has cooled to room temperature, homogenization may be repeated, particularly if volatile constituents are still to be incorporated.

The examples below serve to illustrate the present invention without limiting it. Unless indicated otherwise, all amounts, proportions and percentages are based on the weight and the total amount or on the total weight of the preparations.

Example 1

O/W emulsion

	% by weight
Stearic acid	3.50
Glycerol	3.00
Cetylstearyl alcohol	0.50
Dicaprylyl ether	8.00
Uvinul®T150	5.00
Hexyldecyl laurate	12.00
Sodium hydroxide (45% strength)	0.33
Carbomer	0.20
Preservative	q.s.
Perfume	q.s.
Water, demin.	ad 100.00

Example 2

W/O emulsion

	% by weight
Arlacel®989	5.50
Butylene glycol	5.00
Hexyldecyl laurate	12.00
Uvinul®T150	5.00
Cetylstearyl isononanoate	6.00
Carbomer	0.20
Preservative	q.s.
Perfume	q.s.
Water, demin.	ad 100.00

Example 3

Hydrodispersion gel

	% by weight
Carbomer	0.50
Butylene glycol	5.00
Hexyldecyl laurate	10.00
Sodium hydroxide (45% strength)	0.35
Uvinul®T150	5.00
Hydroxypropylcellulose	0.60
Preservative	q.s.
Perfume	q.s.
Water, demin.	ad 100.00

Patent claims:

1. An active ingredient combination comprising tris(2-ethylhexyl) 4,4',4"-(1,3,5-triazine-2,4,6-triyltriimino)trisbenzoate and one or more esters of unbranched-chain carboxylic acids and branched-chain alcohols.

2. The use of one or more esters of unbranched-chain carboxylic acids and branched-chain alcohols as solvent, solubility promoter or solubilizer for tris(2-ethylhexyl) 4,4',4"-(1,3,5-triazine-2,4,6-triyltriimino)trisbenzoate, in particular for the use in light protection compositions.

3. The combination as claimed in claim 1 or the use as claimed in claim 2, characterized in that the total amount of tris(2-ethylhexyl) 4,4',4"-(1,3,5-triazine-2,4,6-triyltriimino)trisbenzoate in the finished cosmetic or dermatological preparations is chosen from the range 0.1-10.0% by weight, preferably 0.5-6.0% by weight, in each case based on the total weight of the preparations.

4. The combination as claimed in claim 1 or the use as claimed in claim 2, characterized in that the ester(s) of branched-chain carboxylic acids and branched-chain alcohols is / are present in a mixture with the parent alcohols R_2-OH.

5. The combination as claimed in claim 1 or the use as claimed in claim 2, characterized in that the ester of branched-chain carboxylic acids and branched-chain alcohols chosen is hexyldecyl laurate.

6. The combination as claimed in claim 1 or the use as claimed in claim 2, characterized in that the total amount of one or more esters of unbranched-chain carboxylic acids and branched-chain alcohols in the finished cosmetic or dermatological preparations is chosen from the range 0.1-25.0% by weight, preferably 0.5-15.0% by weight, in each case based on the total weight of the preparations.

Abstract:

Active ingredient combinations comprising tris(2-ethylhexyl) 4,4',4"-(1,3,5-triazine-2,4,6-triyltriimino)trisbenzoate and one or more esters of unbranched-chain carboxylic acids and branched-chain alcohols.